

CLAIMS

1. A system for determining whether a delivery hose has disconnected or separated from a liquid delivery vehicle, including a fluid pump, and for automatically terminating the flow of liquid in response to determining that the delivery hose has disconnected or separated, said system comprising:

a transmitter;

a shock sensor for providing a shock signal when a disconnected or separated hose strikes the ground or comes into contact with any object, said transmitter responsive to the shock signal from the shock sensor to transmit a disconnect signal;

means for securing the transmitter and shock sensor to said delivery hose;

a receiver for receiving the disconnect signal from the transmitter and for determining that a disconnect signal has been transmitted by the transmitter; and

means for terminating the flow of fluid from the delivery vehicle in response to the receiver determining that a disconnect signal has been transmitted by the transmitter.

2. The system for determining whether a delivery hose has disconnected or separated in accordance with claim 1 wherein said means for terminating the flow of fluid includes means for terminating the pump.

3. The system for determining whether a delivery hose has disconnected or separated in accordance with

claim 1 wherein said delivery vehicle includes a valve in communication with the flow of fluid through said delivery hose, said means for terminating the flow of fluid includes means for automatically closing said valve.

4. The system for determining whether a delivery hose has disconnected or separated in accordance with claim 1 wherein said shock sensor is a strip of piezoelectric material.

5. The system for determining whether a delivery hose has disconnected or separated in accordance with claim 1 wherein said means for securing the transmitter and shock sensor to the hose is a hook and loop material.

6. The system for determining whether a delivery hose has disconnected or separated in accordance with claim 1 wherein said transmitter transmits an encoded radio frequency disconnect signal.

7. The system for determining whether a delivery hose has disconnected or separated in accordance with claim 1 wherein said transmitter includes electronic circuitry that has immunity to normal ambient vibration levels.

8. A transmitter for determining whether a delivery hose has disconnected or separated from a liquid delivery vehicle and for transmitting a disconnect signal in response to determining that the delivery hose has disconnected or separated, said transmitter comprising:

a shock sensor for providing a shock signal when a disconnected hose strikes the ground or comes into contact with any object;

electronic circuitry responsive to the shock signal from the shock sensor to transmit a disconnect signal; and

means for securing the transmitter to said delivery hose.

9. The transmitter for determining whether a delivery hose has disconnected or separated in accordance with claim 8 wherein said shock sensor is a strip of piezoelectric material.

10. The transmitter for determining whether a delivery hose has disconnected or separated in accordance with claim 8 wherein said means for securing the transmitter to the hose is a hook and loop material.

11. The transmitter for determining whether a delivery hose has disconnected or separated in accordance with claim 8 wherein said transmitter transmits an encoded radio frequency disconnect signal.

12. The transmitter for determining whether a delivery hose has disconnected or separated in accordance with claim 8 wherein said electronic circuitry has immunity to normal ambient vibration levels.

13. A method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle, including a fluid pump, said method comprising the steps of:

securing a shock sensor and transmitter to said delivery hose;

generating a shock signal in the shock sensor when the delivery hose falls to the ground or comes into contact with any object; and

transmitting a disconnect signal from a transmitter to a receiver when the shock sensor generates the shock signal.

14. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 13, said method comprising the additional steps of:

receiving the disconnect signal from the transmitter at a receiver; and

determining at the receiver that a disconnect signal has been transmitted by the transmitter.

15. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 14, said method comprising the additional step of:

automatically terminating the flow of fluid from the delivery vehicle in response to the receiver determining that a disconnect signal has been transmitted by the transmitter.

16. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 15, said method comprising the additional step of:

terminating the flow of fluid by automatically disabling a pump.

17. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 15, said method comprising the additional step of:

terminating the flow of fluid by automatically closing a valve.

18. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 13, wherein the step of generating a shock signal in the shock sensor includes sensing the shock with a strip of piezoelectric material.

19. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 13, wherein the step of securing the shock sensor and transmitter to the delivery hose includes securing the shock sensor and transmitter to the delivery hose with a hook and loop material.

20. The method for determining that a delivery hose has disconnected or separated from a liquid delivery vehicle in accordance with claim 13, wherein the step of transmitting a disconnect signal includes the step of transmitting an encoded radio frequency disconnect signal.